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Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

In the Matter of )  
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Amendment of Parts 2, 22, 90 and 94 )  
of the Commission's Rules and Regulations )  
to Permit Routine Licensing and Use of )  
Bi-Directional Signal Boosters )  
)

RM-8200

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

**EX PARTE COMMENTS**  
**OF ANDREW CORPORATION**

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**EX PARTE COMMENTS  
OF ANDREW CORPORATION**

Andrew Corporation ("Andrew"), by its undersigned counsel and pursuant to Section 1.1200 of the Commission's Rules, 47 C.F.R. § 1.1200 (1993), hereby submits these brief *ex parte* comments in support of TX RX Systems Inc.'s ("TX RX") Petition for Rulemaking.<sup>1/</sup> Andrew submits these *ex parte* comments to express its enthusiastic support for TX RX's proposal to permit the routine use of bi-directional signal boosters outside of airports and cellular systems without obtaining a waiver of the Commission's Rules.

Signal boosters generally provide additional signal coverage in areas where the normal, non-boosted signal would be adequate if there were no obstructions preventing reception of the radio signal. The signal boosters do not boost the radio signals outside of the coverage area, but merely amplify the signal to eliminate deadspots within the coverage area. In Andrew's view, the liberalized use of bi-directional signal boosters proposed by TX RX is necessary to accommodate the increasing market demand for ubiquitous radio signal coverage in shielded

<sup>1/</sup> Petition for Rulemaking of TX RX Systems, Inc., RM-8200 (filed February 25, 1993). This petition was placed on public notice on March 18, 1993.

environments. Moreover, Andrew believes that the TX RX proposal strikes the appropriate balance between the industry's need to meet customer demands for ubiquitous radio signal coverage and the Commission's need to minimize the potential for interference to proximate radio operations.

## **I. STATEMENT OF INTEREST**

Andrew is a well-established and internationally renowned designer, manufacturer and supplier of electronic radio communications products and services. Andrew's customers include cellular and private land mobile operators, common carriers, private microwave users and the broadcast industry. Specifically, Andrew designs and manufactures a broad line of products for the radio communications industry including signal boosters and distribution amplifier products for both the public and private land mobile industry. Consequently, Andrew is intimately familiar with the technology of signal boosters and their use in the marketplace. In Andrew's experience, the advances in signal booster technology have virtually eliminated the likelihood of interference with proximate radio systems. Accordingly, Andrew urges the Commission to grant TX RX's petition and adopt rules that will permit the routine use of signal boosters outside of airports and cellular systems without obtaining a waiver.

## **II. THE TX RX PROPOSAL**

Unless a waiver is obtained, signal boosters currently may be used only in airports or in cellular systems. TX RX proposes that the Commission amend Parts 2, 22, 90 and 94 of its Rules to allow routine use of signal boosters in a variety of radio services without obtaining system specific waivers. Specifically, TX RX requests that the Commission amend:

- the private land mobile radio rules (Part 90) to facilitate the routine use of signal boosters in the 806-824/851-869 MHz and 896-901/935-940 MHz bands;
- the common carrier paging rules (Part 22) to facilitate the routine use of signal boosters in the 931-932 MHz band; and
- the Private Operational Fixed Microwave Service (Part 94) to accommodate the use of signal boosters by private radio licensees.

TX RX also proposes that the Commission permit the use of type-accepted boosters, without specific authorization, where the signal booster will be used to penetrate structures or other obstacles within the area customarily served by the licensee's system.

In support of its Petition, TX RX argues that signal boosters are necessary to provide ubiquitous coverage in urban settings with many low-powered devices operating in environments which are otherwise impervious to radio transmissions. TX RX argues further that the boosters do not extend radio coverage but rather merely fill in "deadspots" in the coverage area created by blocked terrain or man-made structures. Because of the increase in technical sophistication and versatility of bi-directional signal boosters, TX RX concludes that the harmful interference concerns that justified the limited use of signal boosters within airports or cellular systems no longer serve a valid purpose. Accordingly, the time consuming and costly process of obtaining a system specific waiver from the Commission to install signal boosters (outside of airports and cellular systems) disserves the public interest.

### **III. THE TX RX PROPOSAL TO EXPAND THE PERMISSIBLE USE OF SIGNAL BOOSTERS SERVES THE PUBLIC INTEREST AND SHOULD BE ADOPTED**

In Andrew's view, the TX RX proposal to permit the routine use of type-accepted signal boosters in a variety of radio services would serve the public interest by allowing system designers to efficiently deploy systems that offer ubiquitous coverage without compromising the integrity of proximate radio systems.

#### **A. The TX RX Proposal Serves the Public Interest**

Andrew concurs with TX RX that the advances in signal booster technology and demand for ubiquitous radio coverage warrant reconsideration of the Commission's policy on the use of signal boosters. In Andrew's view, the rationale for limiting the routine use of signal boosters - - harmful system interference -- is diminished in light of technological advancements in the amplification of radio signals. Recent developments in output level control circuitry further assure that signal booster output will remain within the Commission's spurious emission specification. Adoption of the rule amendments proposed by TX RX would modernize the Commission's Rules to reflect the current technology of signal boosters to the benefit of all interested parties. TX RX's proposed regulatory revisions would take advantage of this new technology and enhance radio service coverage nationwide.

Andrew believes that manufacturers of signal boosters would benefit from the TX RX proposal because the relaxed regulatory scheme would facilitate the cost effective and timely coverage of shadowed and blocked areas. Under the TX RX proposal, systems could be routinely designed and installed that would provide ubiquitous coverage without causing unwanted interference and without incurring the delays and costs associated with applying for

a waiver. Consequently, the customer's cost of installing systems would be reduced, thereby ultimately reducing the end-user's cost.

**B. The TX RX Proposal Adequately Addresses the Potential for Harmful Interference by Broadband Boosters**

Andrew believes that the TX RX proposal adequately addresses the Commission's overarching concern to minimize the potential for harmful interference. As detailed in TX RX's petition, different types of signal boosters may possess different potentials for causing interference. Specifically, TX RX notes that the difference in technology of narrowband (Class A) as compared to broadband (Class B) signal boosters could result in the amplification of unwanted foreign signals with the potential to cause harmful interference.

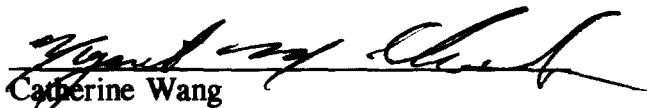
Andrew concurs with TX RX's view that as a result of a frequency conversion and narrowband filtering that takes place within the Class A boosters, they are unlikely to amplify foreign signals. In contrast, Class B boosters which utilize different technology, amplify all radio signals in their vicinity. Therefore, to address this potential for interference inherent in Class B signal boosters, TX RX proposes that the Commission place the responsibility to eliminate harmful interference on the Class B signal booster licensee. See TX RX Petition Appendix, proposed Part 22, § 22.501(p)(3)(d). Andrew believes that this approach to resolving the possibility of Class B signal boosters is equitable, particularly since Class B signal boosters are typically used in closed environments where there is little potential for such interference. In light of the economic benefits to consumers and the increasing customer demand for ubiquitous signal coverage, Andrew believes that TX RX's proposal adequately addresses the small possibility that Class B signal boosters could cause harmful interference.

#### IV. CONCLUSION

The Commission has not visited the issue of the routine use of signal boosters outside of cellular systems and airports in over 20 years. In Andrew's view, significant technological developments, changes in use and the resulting user expectations suggest that the time has come to adopt regulations that accurately reflect the current state of signal booster technology. Accordingly, Andrew unequivocally urges the Commission to grant TX RX's petition and propose rules to expand the routine use of signal booster systems to the private land mobile radio service, the common carrier paging service and the Private Operational Fixed Microwave Service.

Respectfully submitted,

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